

# Application: Using Biodiesel in Your Fleet

GSCCC Stakeholders Meeting  
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Heating Oil • Diesel • Service

*...is your fuel green?™*

# Outline

- Introduction
- About the Fuel
  - Blending
  - Fuel Characteristics
- Usage
  - Performance
  - OEM Warranties
  - Treatment
- Addressing Misconceptions
- Getting the Most out of your Biodiesel
- Resources
- Questions

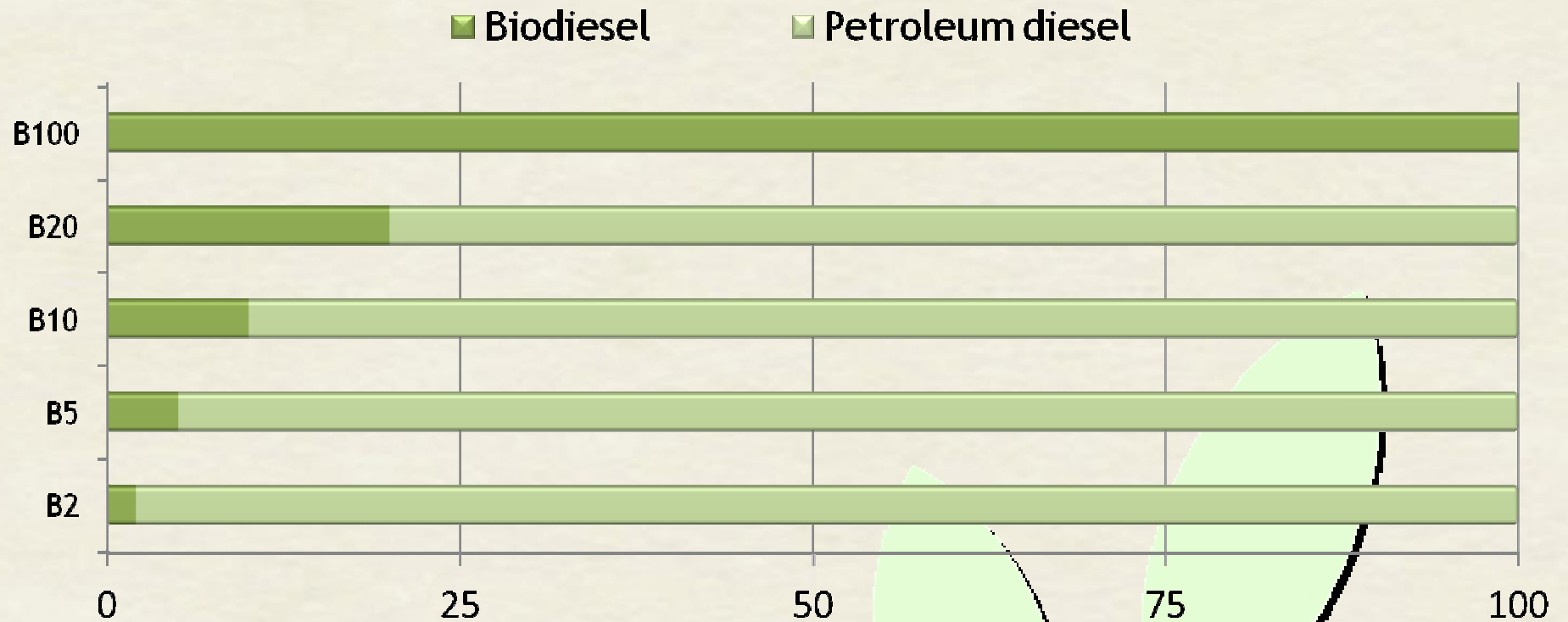


# About Biodiesel

- Blending: combining petroleum distillate with biodiesel fuel to arrive at a usable fuel
  - Ratio
  - Injection
  - Splash Blending
    - Re: Splash Blending - All about Miscibility and Conditions
    - *Know your petroleum*



# Biodiesel Blends



B100 = 100% BBD

B10 = 10% BBD + 90% ULSD

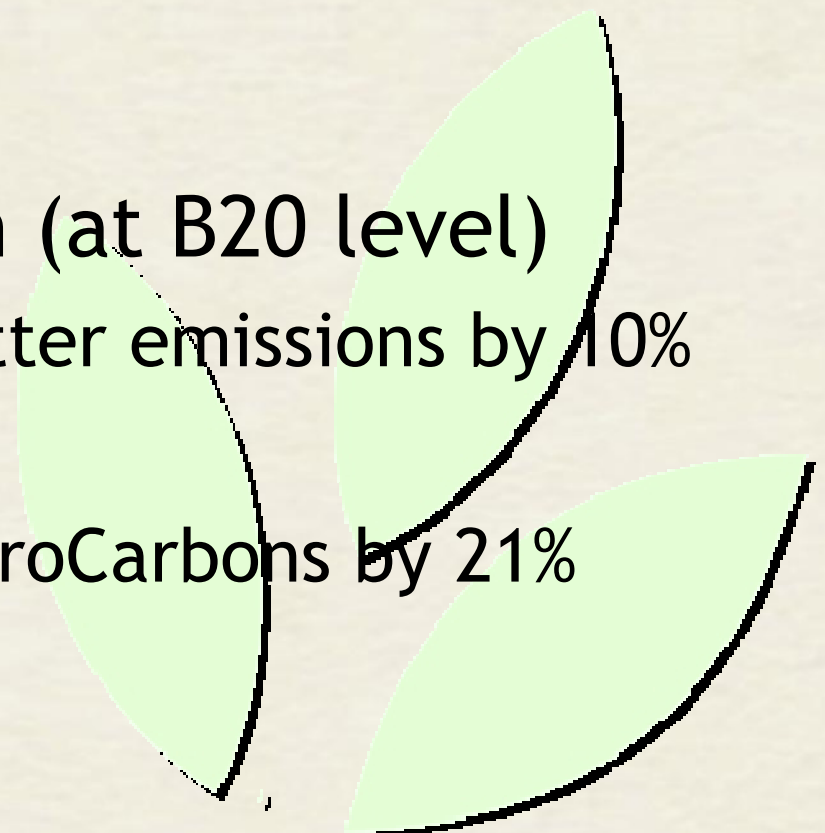
B20 = 20% BBD + 80% ULSD

B5 = 5% BBD + 95% ULSD

B2 = 2% BBD + 98% ULSD

# Fuel Characteristics

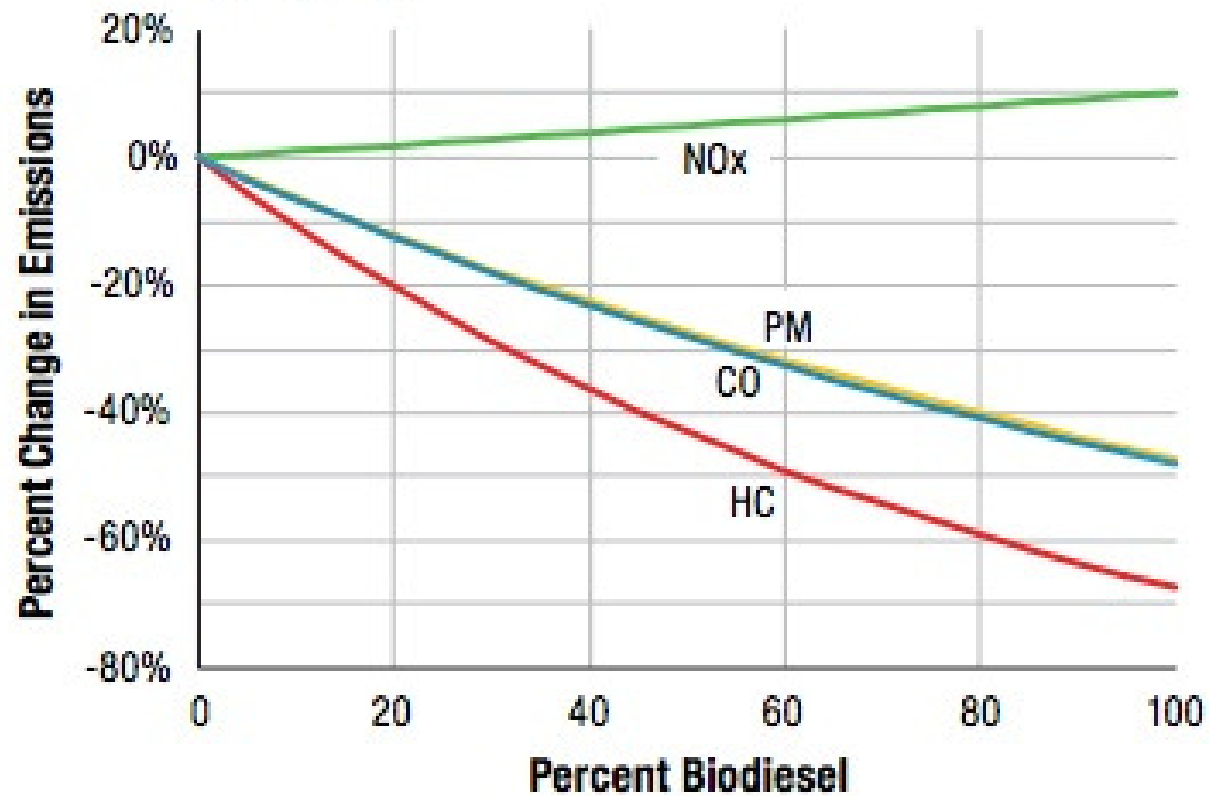
- Higher Cetane Values
- Added Lubricity
- Solvency
- Cleaner Effective Burn (at B20 level)
  - Reduce Particulate Matter emissions by 10%
  - Reduces CO by 11%
  - Reduces Unburned HydroCarbons by 21%





# Emissions Reduction

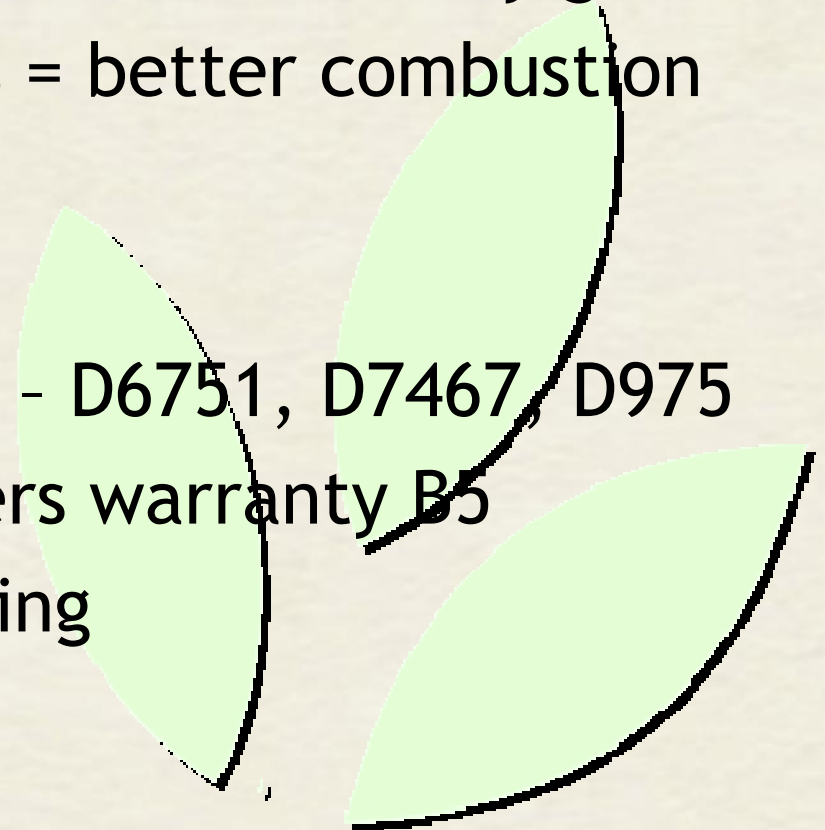
**Figure 1. Average Emission Impacts of Biodiesel for Heavy-Duty Highway Engines**



Source: EPA, Draft Report EPA 420-P-02-001, October 2002

# Biodiesel Usage

- Performance
  - Added lubricity leads to fuel-efficiency gains
  - Higher cetane numbers = better combustion qualities
- OEM Warranties
  - ASTM Change Summary - D6751, D7467, D975
  - All engine manufacturers warranty B5
  - B20 Warranties Increasing



## OEM Warranties

B100 OEM Warranty	B20 OEM Warranty	B5 OEM Warranty
Case IH	Arctic Cat	Audi
Fairbanks Morse	Caterpillar	BMW
New Holland	Chrysler	Daimler Trucks
	Cummins	Kubota
	Ferris	Mazda
	Ford (2011+ models)	Mercedes Benz
	General Motors	Mitsubishi
	HDT USA Motorcycles	PACCAR
	Hino Trucks (2011+)	UD Trucks
	International / Navistar	Volkswagen
	Isuzu Commercial Trucks	
	John Deere	
	Mack	
	Perkins	
	Tomcar	
	Toro	
	Volvo Trucks	
	Yanmar	



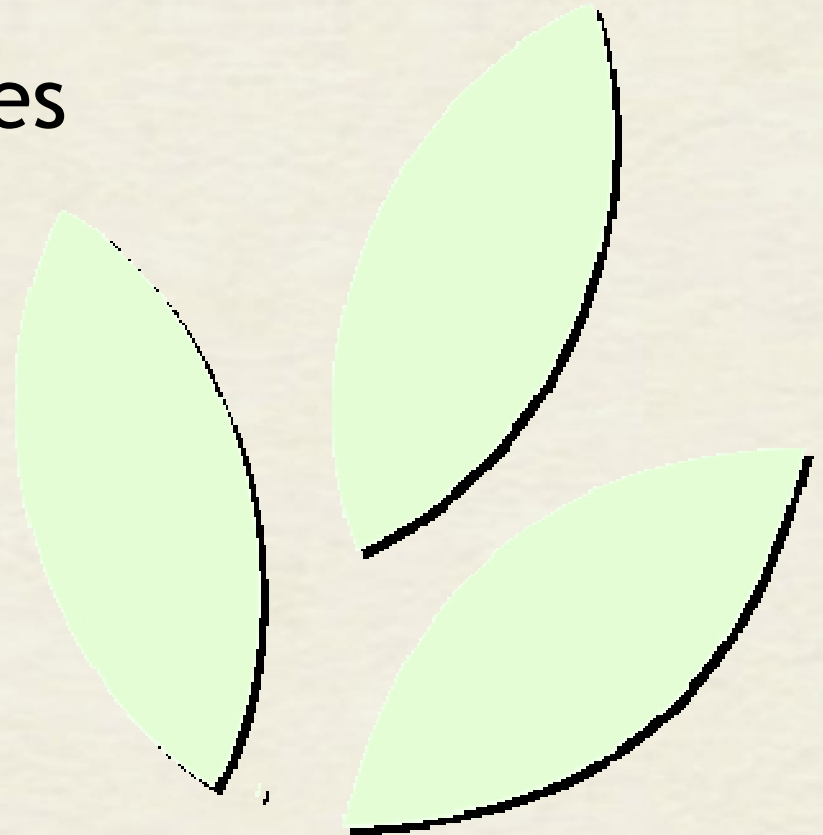
# Usage

- Treatment
  - Prevention over Prescription
  - Biocide/Bactericide
  - Cold Weather Treatment
  - Year-Round Hydrophobic Treatment
    - Condensation and Water Prevention
    - Create an inhospitable environment for bacteria
- Petroleum Content - How much Kero?



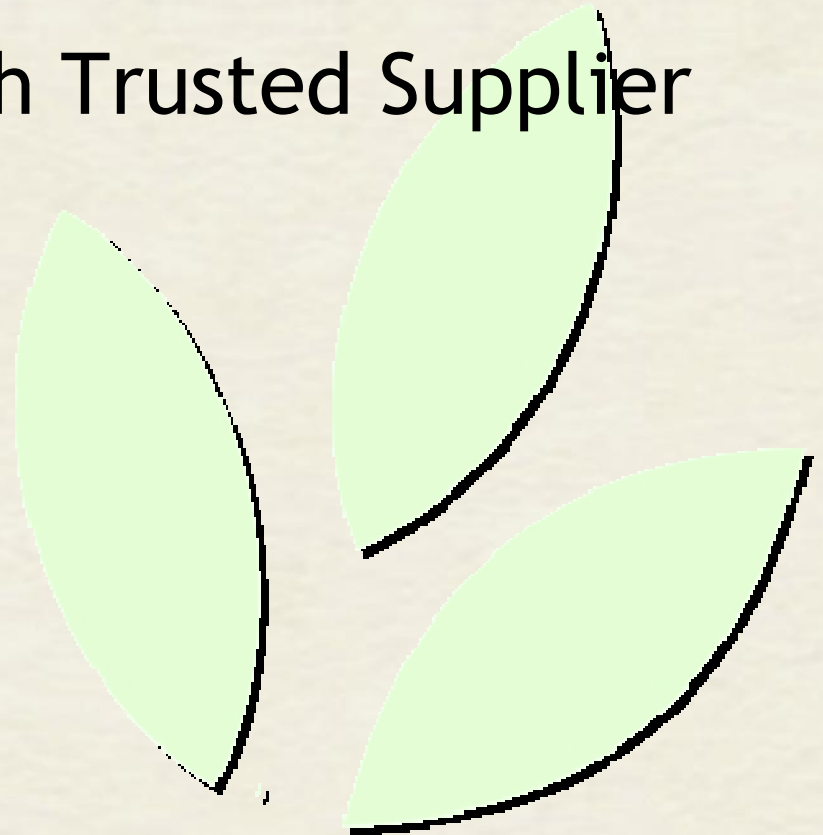
# Misconceptions & Myths

- Clogged Filters & Filterability
- Cold Weather Usage
- Fuel Quality Guarantees
- Availability
- Separation Concerns



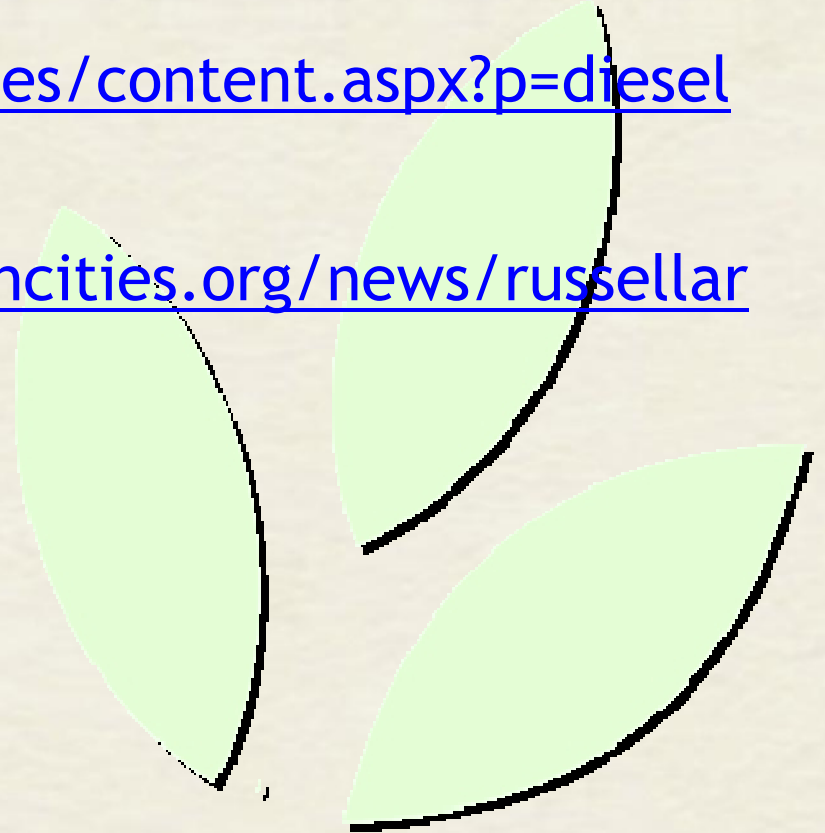
# Getting the Most out of Biodiesel

- Additive Program
- Spec' Biodiesel
- Close Relationship with Trusted Supplier
  - Firsthand Experience
- Consistency

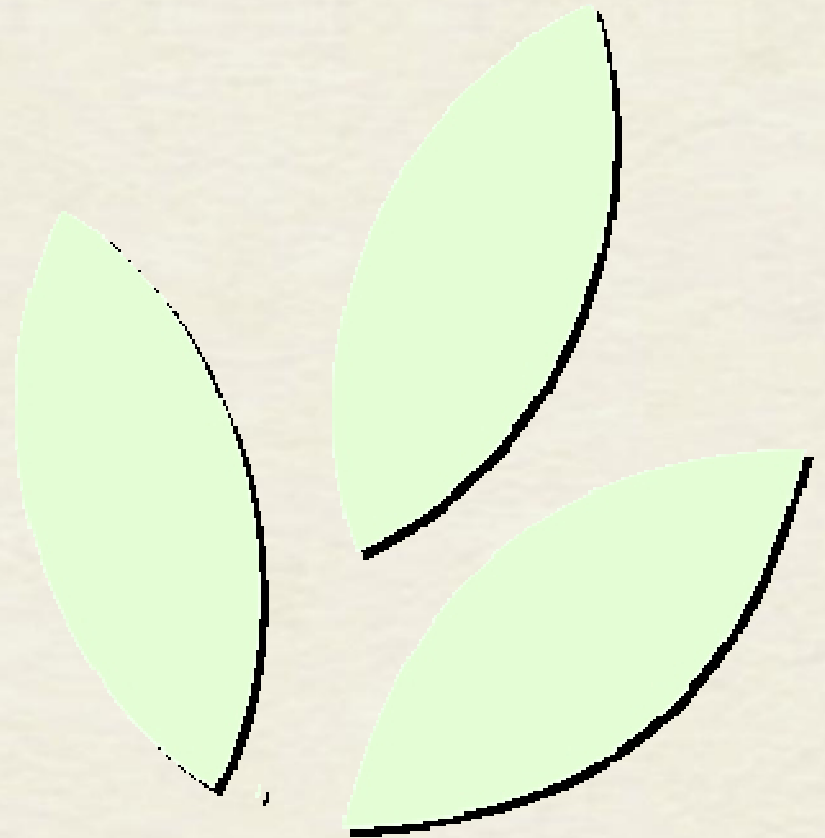


# Resources

- [www.biodiesel.org](http://www.biodiesel.org)
- [www.biodieselmagazine.com](http://www.biodieselmagazine.com)
- [www.spragueenergy.com/pages/content.aspx?p=diesel\\_specs](http://www.spragueenergy.com/pages/content.aspx?p=diesel_specs)
- <http://www.granitestatecleancities.org/news/russellarticle.pdf>
- [www.biotrucker.com](http://www.biotrucker.com)



# Questions?





# Thank You

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